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# Quarterly Demographic Estimates

January to March 2017



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- <sup>P</sup> preliminary
- <sup>r</sup> revised
- X suppressed to meet the confidentiality requirements of the *Statistics Act*
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## Notice to readers

Estimates released in this publication are based on the 2011 Census counts adjusted for census net undercoverage and incompletely enumerated Indian reserves to which is added the estimated demographic growth for the period going from May 10, 2011 to the date of the estimate.

These estimates are not to be mistaken with the census counts.

Total population estimates based on the 2016 Census counts, adjusted for census net undercoverage and incompletely enumerated Indian reserves, will be available in September 2018.

The analysis in this publication is based on preliminary data. These data will be revised over the coming years, and it is possible that some trends described in this publication will change as a result of these revisions. Therefore, this publication should be interpreted with caution.

Most of the components, used to produce preliminary population estimates, are estimated using demographic models or based on data sources less complete or reliable, albeit more timely, than those used for updated or final estimates.

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# Quarterly Demographic Estimates

## Highlights

- On April 1, 2017, Canada's population was estimated at 36,591,241.
- Between January 1 and March 31, 2017, Canada's population grew by 88,144 (+0.2%).
- Canada's population growth in the first quarter of 2017 was mainly due to international migration (+68,278).
- Nunavut had the highest rate of population growth (+0.5%) during this period.
- During the first quarter of 2017, interprovincial migratory increase remained negative in Alberta for the sixth consecutive quarter, a first since the late 1980s.

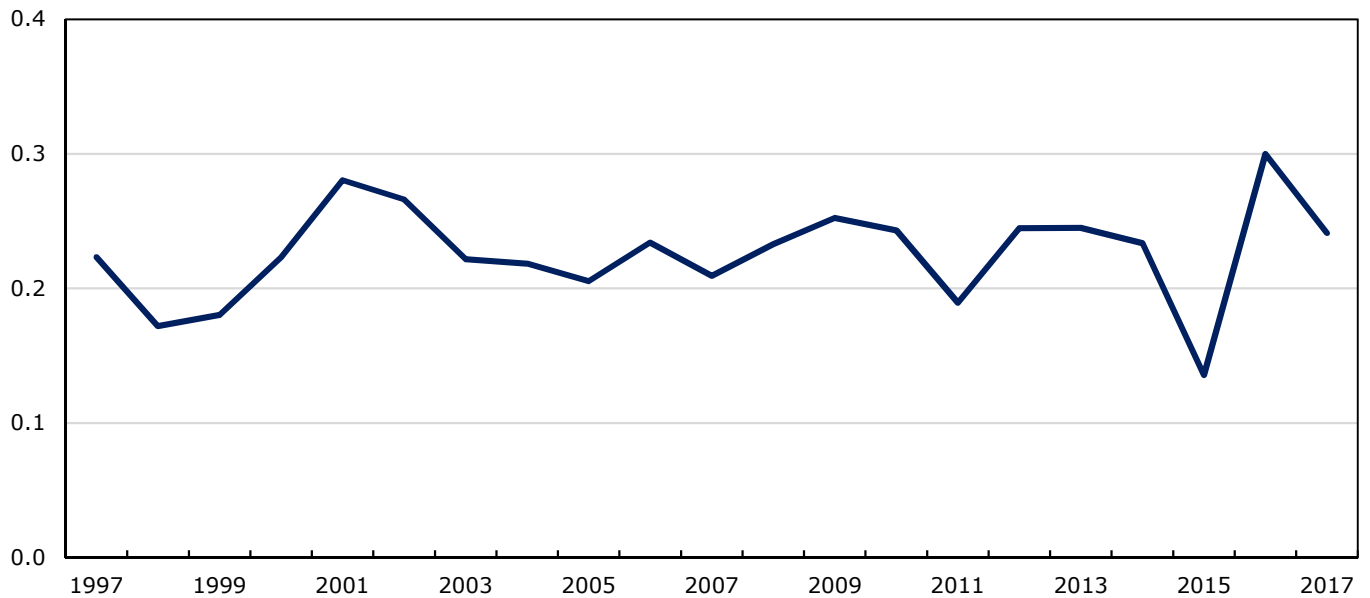
## Analysis

### Canada’s population continues to grow at a steady pace

According to preliminary estimates, Canada’s population was estimated at 36,591,241 on April 1, 2017, up 88,144 from January 1, 2017. This population growth was higher than what is generally observed during the first three months of the year (+78,685 on average over the past 10 years). However, population growth during the first quarter of 2017 was lower than during the same quarter the previous year (+108,265), when population growth was particularly strong.

**Chart A1**  
**Population growth rate, January to March, 1997 to 2017, Canada**

percent



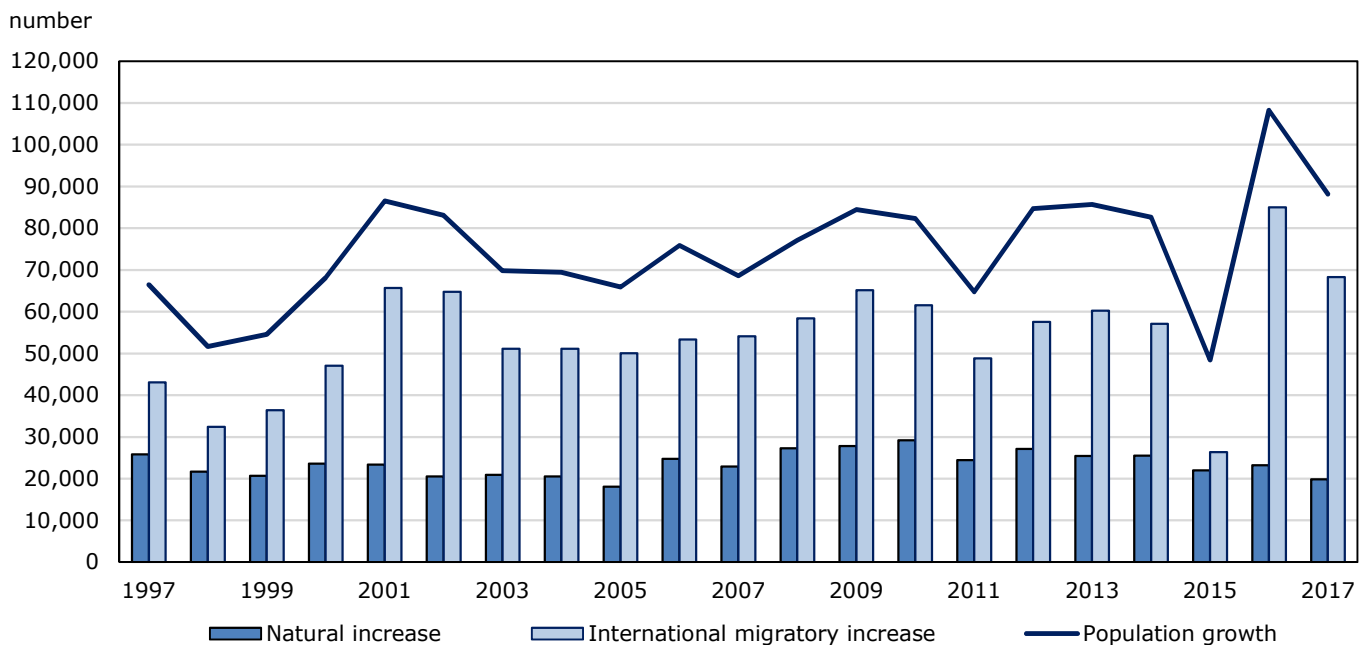
## International migration accounts for most of the population growth

Population growth at the national level is based on two factors: natural increase<sup>1</sup> and international migratory increase,<sup>2</sup> while provincial and territorial population estimates also factor in interprovincial migratory increase.

International migratory increase remained the main driver of population growth, estimated at 68,278 between January 1 and March 31, 2017. The number of immigrants admitted into Canada during this period (+72,788) was the second highest for a first quarter, surpassed only by last year's record numbers (+86,201). Similarly, the number of non-permanent residents grew by 9,153 during the first quarter of 2017, compared with an increase of 12,488 during the same period in 2016. The components of net emigration (emigration, return emigration and net temporary emigration) remained stable.

According to preliminary estimates, natural increase in the first quarter of 2017 was 19,866, or the difference between 94,851 births and 74,985 deaths.

**Chart A2**  
**Factors of population growth, January to March, 1997 to 2017, Canada**



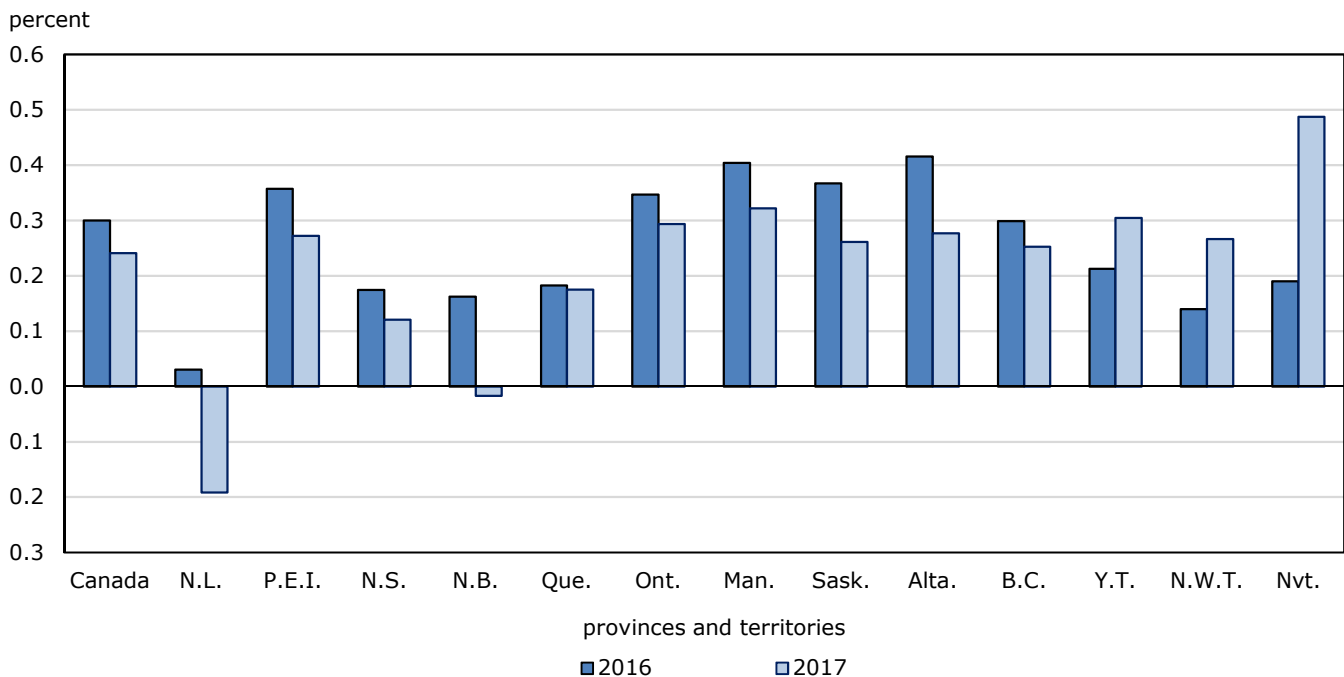
**Note:** Before 2012, population growth is not equal to the sum of natural increase and international migratory increase because residual deviation must also be considered in the calculation.

### Population growth everywhere except in Newfoundland and Labrador and New Brunswick

During the first quarter of 2017, population growth<sup>3</sup> was positive in all provinces and territories, except Newfoundland and Labrador, where the population declined (-0.2%), and New Brunswick, where the population remained relatively stable. Nunavut had the highest rate of population growth (+0.5%) in Canada. Moreover, the population growth rate was 0.3% in Prince Edward Island, Ontario, the Prairies, and British Columbia. Population growth in these provinces was stronger than in all of Canada (+0.2%).

Compared with the same period last year, population growth rates fell slightly in each of the Atlantic provinces and in the Prairies, and remained stable in Quebec, Ontario, and British Columbia. These rates rose in the territories.

**Chart A3**  
**Population growth rate, January to March, 2016 and 2017, Canada, provinces and territories**





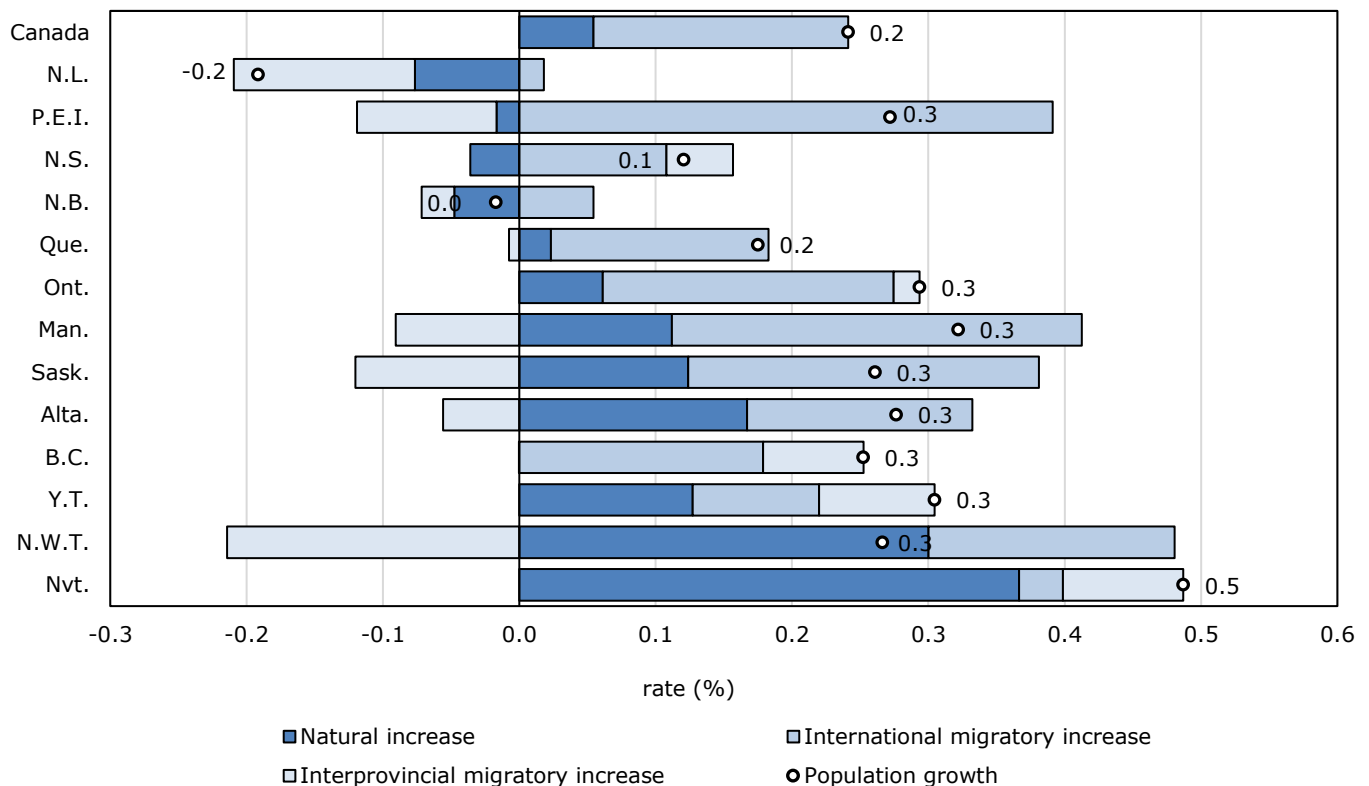
## International migration is the main driver of growth in almost all provinces

During the first quarter of 2017, international migratory increase was the main driver of growth in all provinces except Alberta, where natural increase accounted for most of the growth. Growth in the three territories was also mainly attributable to natural increase.

International migratory increase was down slightly compared with the same quarter last year in all provinces, except Prince Edward Island, Quebec, and British Columbia. This was mainly due to lower immigration levels compared with the first quarter of 2016, when most provinces saw a record number of immigrants. Despite this decrease, immigration remained particularly strong in all the provinces during the first quarter of 2017, especially Prince Edward Island, which welcomed a record number of immigrants for a first quarter. In addition, for the January to March period, the number of immigrants arriving in the other Atlantic provinces, Quebec and the Prairie provinces has been exceeded only once in the past—during the same quarter last year.

Interprovincial migration was negative (-2,392) in Alberta for the sixth consecutive quarter, a first since the late 1980s when the province recorded net interprovincial migration losses for 10 consecutive quarters. Alberta's migratory losses primarily benefitted British Columbia and Ontario. These two provinces continued to post the strongest interprovincial migration growth in absolute numbers (+2,702 in Ontario and +3,526 in British Columbia). The only other province with positive net interprovincial migration was Nova Scotia (+464), which was the highest growth for this province since the second quarter of 2003 (+999). Net interprovincial migration remained negative in Quebec (-633), but it has never come closer to zero since the fourth quarter of 2009 (+15).

**Chart A4**  
**Factors of population growth, January to March, 2017, Canada, provinces and territories**



**Table A1**  
**Population on April 1st 2017 and population growth, first quarter, 2016 and 2017, Canada, provinces and territories**

	Population	Population growth for the first quarter			
		2016		2017	
		number	rate (%)	number	rate (%)
Canada	36,591,241	108,265	0.3	88,144	0.2
N.L.	528,683	161	0.0	-1,013	-0.2
P.E.I.	149,790	527	0.4	407	0.3
N.S.	953,173	1,653	0.2	1,149	0.1
N.B.	757,641	1,226	0.2	-130	-0.0
Que.	8,371,498	15,152	0.2	14,647	0.2
Ont.	14,135,610	48,172	0.3	41,443	0.3
Man.	1,332,629	5,291	0.4	4,283	0.3
Sask.	1,161,365	4,196	0.4	3,026	0.3
Alta.	4,291,980	17,558	0.4	11,853	0.3
B.C.	4,789,221	14,118	0.3	12,064	0.3
Y.T.	37,808	79	0.2	115	0.3
N.W.T.	44,381	62	0.1	118	0.3
Nvt.	37,462	70	0.2	182	0.5

**Endnotes**

1. Natural increase is the difference between the number of births and deaths.
2. International migratory increase basically refers to the total number of moves between Canada and abroad that result in a change in the usual place of residence. It is calculated by adding immigration, return emigration and net non-permanent residents, then subtracting emigration and net temporary emigration.
3. A growth rate higher than -0.1% and lower than 0.1% is considered not significant and relatively stable.

## Statistical tables

**Table 1.1**  
**Quarterly population estimates, Canada, provinces and territories - Population**

	Canada	N.L.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T.	N.W.T.	Nvt.
	number													
<b>2011</b>														
July 1st	34,342,780	525,037	144,038	944,469	755,530	8,007,656	13,263,544	1,233,728	1,066,349	3,790,191	4,499,139	35,402	43,501	34,196
October 1st	34,469,327	525,874	144,496	945,260	755,700	8,031,428	13,317,140	1,237,759	1,070,894	3,807,046	4,520,299	35,533	43,541	34,357
<b>2012</b>														
January 1st	34,536,389	526,211	144,575	944,901	756,278	8,044,417	13,336,799	1,242,058	1,075,165	3,826,708	4,525,605	35,637	43,597	34,438
April 1st	34,621,054	525,708	144,878	944,705	755,973	8,059,380	13,366,514	1,245,805	1,079,490	3,851,637	4,533,017	35,681	43,645	34,621
July 1st	34,750,545	526,450	145,080	944,943	756,777	8,085,906	13,413,702	1,250,265	1,086,018	3,880,755	4,546,290	36,058	43,594	34,707
October 1st	34,880,866	527,338	145,208	944,984	756,781	8,108,272	13,463,298	1,254,636	1,091,938	3,908,789	4,564,878	36,230	43,629	34,885
<b>2013</b>														
January 1st	34,935,909	527,465	145,010	944,587	756,105	8,117,526	13,478,050	1,258,542	1,095,203	3,931,225	4,567,318	36,165	43,685	35,028
April 1st	35,021,626	527,655	144,923	943,766	755,632	8,130,518	13,507,917	1,261,710	1,098,903	3,959,914	4,575,705	36,113	43,830	35,040
July 1st	35,155,451	527,409	145,178	943,538	755,842	8,155,505	13,556,229	1,265,597	1,104,990	3,996,620	4,589,041	36,315	43,786	35,401
October 1st	35,293,347	528,470	145,294	943,574	755,633	8,174,338	13,609,460	1,269,579	1,109,701	4,029,102	4,612,657	36,225	43,707	35,607
<b>2014</b>														
January 1st	35,339,468	528,575	145,316	943,812	755,641	8,180,148	13,618,474	1,272,759	1,113,221	4,050,711	4,615,246	36,166	43,760	35,639
April 1st	35,422,086	527,738	145,420	943,244	755,157	8,191,844	13,644,739	1,276,111	1,117,131	4,076,775	4,627,856	36,447	43,790	35,834
July 1st	35,544,564	528,333	145,832	943,294	754,865	8,214,503	13,685,171	1,280,953	1,121,285	4,108,283	4,645,261	36,872	43,889	36,023
October 1st	35,677,466	528,730	146,226	944,052	755,308	8,235,228	13,735,317	1,285,790	1,125,074	4,133,626	4,670,870	37,006	44,061	36,178
<b>2015</b>														
January 1st	35,701,743	528,749	146,208	943,748	755,111	8,237,833	13,736,348	1,289,177	1,127,777	4,146,691	4,672,792	36,909	44,126	36,274
April 1st	35,750,157	528,610	146,279	942,621	754,459	8,242,669	13,755,697	1,291,595	1,129,314	4,161,343	4,679,968	37,081	44,207	36,314
July 1st	35,848,610	528,676	146,736	943,373	754,309	8,259,452	13,797,038	1,295,981	1,132,263	4,179,660	4,692,953	37,393	44,244	36,532
October 1st	35,981,735	529,383	146,994	945,215	754,465	8,279,216	13,854,221	1,301,357	1,137,386	4,201,458	4,713,761	37,229	44,392	36,658
<b>2016</b>														
January 1st	36,038,515	529,506	147,243	945,850	754,899	8,287,843	13,875,274	1,306,487	1,141,122	4,216,375	4,715,559	37,148	44,426	36,783
April 1st	36,146,780	529,667	147,770	947,503	756,125	8,302,995	13,923,446	1,311,778	1,145,318	4,233,933	4,729,677	37,227	44,488	36,853
July 1st	36,286,425	530,128	148,649	949,501	756,780	8,326,089	13,982,984	1,318,128	1,150,632	4,252,879	4,751,612	37,492	44,469	37,082
October 1st	36,443,632	530,376	149,278	952,333	757,997	8,349,793	14,063,256	1,323,958	1,155,393	4,268,929	4,773,345	37,624	44,204	37,146
<b>2017</b>														
January 1st	36,503,097	529,696	149,383	952,024	757,771	8,356,851	14,094,167	1,328,346	1,158,339	4,280,127	4,777,157	37,693	44,263	37,280
April 1st	36,591,241	528,683	149,790	953,173	757,641	8,371,498	14,135,610	1,332,629	1,161,365	4,291,980	4,789,221	37,808	44,381	37,462

**Note:** Estimates are final postcensal up to July 1, 2012, updated postcensal from October 1, 2012 to April 1, 2016 and preliminary postcensal from July 1, 2016.

**Source:** Statistics Canada, Demography Division.

**Table 1.2**  
**Quarterly population estimates, Canada, provinces and territories - Total growth in percentage**

	Canada	N.L.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T.	N.W.T.	Nvt.
	percent													
<b>2011</b>														
July to September	0.37	0.16	0.32	0.08	0.02	0.30	0.40	0.33	0.43	0.44	0.47	0.37	0.09	0.47
October to December	0.19	0.06	0.05	-0.04	0.08	0.16	0.15	0.35	0.40	0.52	0.12	0.29	0.13	0.24
<b>2012</b>														
January to March	0.24	-0.10	0.21	-0.02	-0.04	0.19	0.22	0.30	0.40	0.65	0.16	0.12	0.11	0.53
April to June	0.37	0.14	0.14	0.03	0.11	0.33	0.35	0.36	0.60	0.75	0.29	1.05	-0.12	0.25
July to September	0.37	0.17	0.09	0.00	0.00	0.28	0.37	0.35	0.54	0.72	0.41	0.48	0.08	0.51
October to December	0.16	0.02	-0.14	-0.04	-0.09	0.11	0.11	0.31	0.30	0.57	0.05	-0.18	0.13	0.41
<b>2013</b>														
January to March	0.25	0.04	-0.06	-0.09	-0.06	0.16	0.22	0.25	0.34	0.73	0.18	-0.14	0.33	0.03
April to June	0.38	-0.05	0.18	-0.02	0.03	0.31	0.36	0.31	0.55	0.92	0.29	0.56	-0.10	1.02
July to September	0.39	0.20	0.08	0.00	-0.03	0.23	0.39	0.31	0.43	0.81	0.51	-0.25	-0.18	0.58
October to December	0.13	0.02	0.02	0.03	0.00	0.07	0.07	0.25	0.32	0.53	0.06	-0.16	0.12	0.09
<b>2014</b>														
January to March	0.23	-0.16	0.07	-0.06	-0.06	0.14	0.19	0.26	0.35	0.64	0.27	0.77	0.07	0.55
April to June	0.35	0.11	0.28	0.01	-0.04	0.28	0.30	0.38	0.37	0.77	0.38	1.16	0.23	0.53
July to September	0.37	0.08	0.27	0.08	0.06	0.25	0.37	0.38	0.34	0.61	0.55	0.36	0.39	0.43
October to December	0.07	0.00	-0.01	-0.03	-0.03	0.03	0.01	0.26	0.24	0.32	0.04	-0.26	0.15	0.27
<b>2015</b>														
January to March	0.14	-0.03	0.05	-0.12	-0.09	0.06	0.14	0.19	0.14	0.35	0.15	0.46	0.18	0.11
April to June	0.28	0.01	0.31	0.08	-0.02	0.20	0.30	0.34	0.26	0.44	0.28	0.84	0.08	0.60
July to September	0.37	0.13	0.18	0.20	0.02	0.24	0.41	0.41	0.45	0.52	0.44	-0.44	0.33	0.34
October to December	0.16	0.02	0.17	0.07	0.06	0.10	0.15	0.39	0.33	0.35	0.04	-0.22	0.08	0.34
<b>2016</b>														
January to March	0.30	0.03	0.36	0.17	0.16	0.18	0.35	0.40	0.37	0.42	0.30	0.21	0.14	0.19
April to June	0.39	0.09	0.59	0.21	0.09	0.28	0.43	0.48	0.46	0.45	0.46	0.71	-0.04	0.62
July to September	0.43	0.05	0.42	0.30	0.16	0.28	0.57	0.44	0.41	0.38	0.46	0.35	-0.60	0.17
October to December	0.16	-0.13	0.07	-0.03	-0.03	0.08	0.22	0.33	0.25	0.26	0.08	0.18	0.13	0.36
<b>2017</b>														
January to March	0.24	-0.19	0.27	0.12	-0.02	0.18	0.29	0.32	0.26	0.28	0.25	0.30	0.27	0.49

**Note:** Total growth is final up to June 2012, updated from July 2012 to March 2016 and preliminary from April 2016.

**Source:** Statistics Canada, Demography Division.

**Table 1.3**  
**Quarterly population estimates, Canada, provinces and territories - Total growth**

	Canada	N.L.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T.	N.W.T.	Nvt.
	number													
<b>2011</b>														
July to September	126,547	837	458	791	170	23,772	53,596	4,031	4,545	16,855	21,160	131	40	161
October to December	67,062	337	79	-359	578	12,989	19,659	4,299	4,271	19,662	5,306	104	56	81
<b>2012</b>														
January to March	84,665	-503	303	-196	-305	14,963	29,715	3,747	4,325	24,929	7,412	44	48	183
April to June	129,491	742	202	238	804	26,526	47,188	4,460	6,528	29,118	13,273	377	-51	86
July to September	130,321	888	128	41	4	22,366	49,596	4,371	5,920	28,034	18,588	172	35	178
October to December	55,043	127	-198	-397	-676	9,254	14,752	3,906	3,265	22,436	2,440	-65	56	143
<b>2013</b>														
January to March	85,717	190	-87	-821	-473	12,992	29,867	3,168	3,700	28,689	8,387	-52	145	12
April to June	133,825	-246	255	-228	210	24,987	48,312	3,887	6,087	36,706	13,336	202	-44	361
July to September	137,896	1,061	116	36	-209	18,833	53,231	3,982	4,711	32,482	23,616	-90	-79	206
October to December	46,121	105	22	238	8	5,810	9,014	3,180	3,520	21,609	2,589	-59	53	32
<b>2014</b>														
January to March	82,618	-837	104	-568	-484	11,696	26,265	3,352	3,910	26,064	12,610	281	30	195
April to June	122,478	595	412	50	-292	22,659	40,432	4,842	4,154	31,508	17,405	425	99	189
July to September	132,902	397	394	758	443	20,725	50,146	4,837	3,789	25,343	25,609	134	172	155
October to December	24,277	19	-18	-304	-197	2,605	1,031	3,387	2,703	13,065	1,922	-97	65	96
<b>2015</b>														
January to March	48,414	-139	71	-1,127	-652	4,836	19,349	2,418	1,537	14,652	7,176	172	81	40
April to June	98,453	66	457	752	-150	16,783	41,341	4,386	2,949	18,317	12,985	312	37	218
July to September	133,125	707	258	1,842	156	19,764	57,183	5,376	5,123	21,798	20,808	-164	148	126
October to December	56,780	123	249	635	434	8,627	21,053	5,130	3,736	14,917	1,798	-81	34	125
<b>2016</b>														
January to March	108,265	161	527	1,653	1,226	15,152	48,172	5,291	4,196	17,558	14,118	79	62	70
April to June	139,645	461	879	1,998	655	23,094	59,538	6,350	5,314	18,946	21,935	265	-19	229
July to September	157,207	248	629	2,832	1,217	23,704	80,272	5,830	4,761	16,050	21,733	132	-265	64
October to December	59,465	-680	105	-309	-226	7,058	30,911	4,388	2,946	11,198	3,812	69	59	134
<b>2017</b>														
January to March	88,144	-1,013	407	1,149	-130	14,647	41,443	4,283	3,026	11,853	12,064	115	118	182

**Note:** Total growth is final up to June 2012, updated from July 2012 to March 2016 and preliminary from April 2016..

**Source:** Statistics Canada, Demography Division.

**Table 2**  
**Quarterly population estimates and factors of demographic growth - Canada**

	Population at beginning period	Natural increase	Net interprovincial migration	Net international migration	Total net migration	Total growth	Total growth rate
			number				percent
<b>2011</b>							
July to September	34,342,780	43,828	0	82,719	82,719	126,547	0.37
October to December	34,469,327	30,831	0	36,231	36,231	67,062	0.19
<b>2012</b>							
January to March	34,536,389	27,101	0	57,564	57,564	84,665	0.24
April to June	34,621,054	35,580	0	93,911	93,911	129,491	0.37
July to September	34,750,545	42,836	0	87,485	87,485	130,321	0.37
October to December	34,880,866	29,756	0	25,287	25,287	55,043	0.16
<b>2013</b>							
January to March	34,935,909	25,445	0	60,272	60,272	85,717	0.25
April to June	35,021,626	35,675	0	98,150	98,150	133,825	0.38
July to September	35,155,451	42,674	0	95,222	95,222	137,896	0.39
October to December	35,293,347	29,216	0	16,905	16,905	46,121	0.13
<b>2014</b>							
January to March	35,339,468	25,502	0	57,116	57,116	82,618	0.23
April to June	35,422,086	34,873	0	87,605	87,605	122,478	0.35
July to September	35,544,564	42,087	0	90,815	90,815	132,902	0.37
October to December	35,677,466	26,406	0	-2,129	-2,129	24,277	0.07
<b>2015</b>							
January to March	35,701,743	22,018	0	26,396	26,396	48,414	0.14
April to June	35,750,157	33,239	0	65,214	65,214	98,453	0.28
July to September	35,848,610	41,359	0	91,766	91,766	133,125	0.37
October to December	35,981,735	26,345	0	30,435	30,435	56,780	0.16
<b>2016</b>							
January to March	36,038,515	23,239	0	85,026	85,026	108,265	0.30
April to June	36,146,780	32,947	0	106,698	106,698	139,645	0.39
July to September	36,286,425	40,795	0	116,412	116,412	157,207	0.43
October to December	36,443,632	25,193	0	34,272	34,272	59,465	0.16
<b>2017</b>							
January to March	36,503,097	19,866	0	68,278	68,278	88,144	0.24
April to June	36,591,241	..	..	..	..	..	..

.. not available for a specific reference period

**Note:** See "Data quality, concepts and methodology — Explanatory notes for the tables" section.

**Source:** Statistics Canada, Demography Division.

**Table 3**  
**Quarterly estimates of demographic components - Canada**

	Natural increase		Net interprovincial migration		Net international migration				
	Births	Deaths	In-migrants	Out-migrants	Immigrants	Emigrants	Returning emigrants	Net temporary emigrants	Net non-permanent residents
	number								
<b>2011</b>									
July to September	100,674	56,846	89,862	89,862	71,876	21,067	13,864	5,435	23,481
October to December	91,731	60,900	55,322	55,322	59,608	14,245	6,005	4,423	-10,714
<b>2012</b>									
January to March	91,145	64,044	69,238	69,238	55,587	13,299	6,043	4,278	13,511
April to June	95,290	59,710	90,003	90,003	73,044	13,293	10,978	4,278	27,460
July to September	101,178	58,342	85,820	85,820	66,927	19,815	15,058	5,322	30,637
October to December	94,256	64,500	47,531	47,531	62,334	13,016	5,754	4,289	-25,496
<b>2013</b>									
January to March	92,083	66,638	62,699	62,699	58,256	13,831	5,552	4,410	14,705
April to June	96,602	60,927	96,253	96,253	75,639	13,708	10,728	4,390	29,881
July to September	102,162	59,488	81,855	81,855	65,338	20,091	16,311	5,213	38,877
October to December	94,485	65,269	52,761	52,761	59,789	14,223	5,682	4,359	-29,984
<b>2014</b>									
January to March	93,034	67,532	67,097	67,097	64,472	14,597	5,512	4,412	6,141
April to June	97,439	62,566	102,756	102,756	78,307	14,718	10,059	4,431	18,388
July to September	103,248	61,161	79,966	79,966	65,588	20,225	16,311	5,211	34,352
October to December	95,231	68,825	51,170	51,170	52,044	14,323	5,682	4,361	-41,171
<b>2015</b>									
January to March	93,438	71,420	74,452	74,452	51,124	14,704	5,512	4,414	-11,122
April to June	97,997	64,758	108,765	108,765	72,088	14,827	10,059	4,432	2,326
July to September	103,790	62,431	90,598	90,598	78,895	20,291	16,311	5,211	22,062
October to December	95,611	69,266	48,931	48,931	69,730	14,377	5,682	4,361	-26,239
<b>2016</b>									
January to March	94,517	71,278	72,356	72,356	86,201	14,760	5,512	4,415	12,488
April to June	98,984	66,037	100,889	100,889	86,106	14,877	10,059	4,431	29,841
July to September	104,944	64,149	92,183	92,183	68,241	20,291	16,311	5,211	57,362
October to December	96,620	71,427	46,940	46,940	55,823	14,377	5,682	4,361	-8,495
<b>2017</b>									
January to March	94,851	74,985	73,176	73,176	72,788	14,760	5,512	4,415	9,153

**Note:** See "Data quality, concepts and methodology — Explanatory notes for the tables" section.

**Source:** Statistics Canada, Demography Division.



**Table 4**  
**Quarterly estimates of interprovincial migrants by province or territory of origin and destination, Canada, January to March 2017**

Origin	Destination												Nvt.
	N.L.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T.	N.W.T.	
	number												
N.L.	...	39	326	137	60	719	22	70	709	134	4	71	58
P.E.I.	56	...	204	86	25	437	5	49	98	51	0	11	4
N.S.	155	154	...	472	219	1,421	136	80	875	286	0	86	22
N.B.	130	129	644	...	334	998	114	99	561	255	0	39	20
Que.	89	4	193	414	...	3,853	82	27	607	577	34	11	5
Ont.	403	271	1,389	1,031	2,915	...	853	780	4,418	3,671	59	91	152
Man.	69	18	121	92	115	1,174	...	622	1,022	942	11	18	13
Sask.	18	0	82	30	108	1,343	447	...	2,307	1,132	18	3	20
Alta.	553	160	823	657	725	5,116	734	1,799	...	7,174	140	294	24
B.C.	90	73	506	181	743	3,395	501	473	4,744	...	175	109	11
Y.T.	0	12	33	22	0	75	14	46	84	144	...	32	0
N.W.T.	38	13	4	11	5	86	56	54	377	137	53	...	63
Nvt.	45	0	45	9	14	118	48	14	5	24	0	37	...
In-migrants	1,646	873	4,370	3,142	5,263	18,735	3,012	4,113	15,807	14,527	494	802	392
Out-migrants	2,349	1,026	3,906	3,323	5,896	16,033	4,217	5,508	18,199	11,001	462	897	359
Net	-703	-153	464	-181	-633	2,702	-1,205	-1,395	-2,392	3,526	32	-95	33
Total number of migrants:	73,176												

**Note:** Preliminary estimates based on data from the Canada child benefit (CCB) program (formerly Canada Child Tax Benefit (CCTB)) and  $\mu$  factors calculated using 2012/2013, 2013/2014 and 2014/2015 tax file data from Canada Revenue Agency.

**Source:** Statistics Canada, Demography Division.

## Data quality, concepts and methodology

### Methodology

This section describes the concepts, data sources and methodology used to produce the population estimates. Population estimates are produced to measure the population counts according to various characteristics and geographies between two censuses. The demographic estimates are the official population estimates at the national, provincial and territorial levels.

Postcensal estimates are based on the 2011 Census.

### Population Estimates

#### Estimates of the total population

##### Types of estimates

Population estimates can be either intercensal or postcensal. Intercensal estimates are produced using the counts from two consecutive censuses adjusted for census net undercoverage (CNU)<sup>1</sup> and postcensal estimates. The production of intercensal estimates involves updating the postcensal estimates using the counts from a new census adjusted for CNU.<sup>1</sup>

Postcensal estimates are produced using data from the most recent census adjusted for CNU<sup>1</sup> and the components of demographic growth. In terms of timeliness, postcensal estimates are more up-to-date than data from the most recent census adjusted for CNU,<sup>1</sup> but as they get farther from the date of that census, they become more variable.

##### Levels of estimates

Updating population estimates between censuses entails the use of data from administrative files or surveys. The quality of population estimates therefore depends on the availability of a number of administrative data files that are provided to Statistics Canada by Canadian and foreign government departments. Since some components are not available until several months after the reference date, three kinds of postcensal estimates are produced preliminary postcensal (PP), updated postcensal (PR) and final postcensal (PD). The time lag between the reference date and the release date is three months for preliminary estimates and two to three years for final estimates. Though it requires more vigilance on the part of users, the production of three successive series of postcensal estimates is the strategy that best satisfies the need for both timeliness and accuracy of the estimates. All tables indicate the level of the estimates they contain.

##### Calculation of postcensal population estimates

Population estimates – preliminary, updated and final – are produced by the component method. This method consists of taking the population figures from the most recent census, adjusted for the CNU<sup>1</sup> (census undercoverage minus census overcoverage), and adding or subtracting the number of births, deaths, and components of international and interprovincial migration.

#### A. Provincial / territorial estimates of total population

Population estimates are produced for the provinces and territories first; then they are summed to obtain an estimate of the population of Canada.

The component-method formula for estimating the total provincial / territorial populations is as follows:

$$P_{(t+i)} = P_{(t)} + B_{(t,t+i)} - D_{(t,t+i)} + I_{(t,t+i)} - [E_{(t,t+i)} + \Delta TE_{(t,t+i)}] + RE_{(t,t+i)} + \Delta NPR_{(t,t+i)} + \Delta Ninter_{(t,t+i)} - Resid_{(t,t+i)}$$

where, for each province and territory:

(t,t+i)	interval between times t and t+i;
$P_{(t+i)}$	estimate of the population at time t+i;
$P_{(t)}$	base population at time t (census adjusted for (CNU) <sup>1</sup> or most recent estimate);
B	number of births;
D	number of deaths;
I	number of immigrants;
E	number of emigrants;
$\Delta TE$	net temporary emigration;
RE	number of returning emigrants;
$\Delta NPR$	net non-permanent residents;
$\Delta Ninter$	net interprovincial migration;
Resid	residual deviation (for intercensal estimates).

## B. Levels of estimates

The difference between preliminary<sup>2</sup> and final postcensal population estimates lies in the timeliness of the components. When all the components are preliminary, the population estimate is described as preliminary postcensal (PP). When they are all final, the estimate is referred to as final postcensal (PD). Any other combination of levels is referred to as updated postcensal (PR).

## Base population and components of demographic growth

### A. Base population

The base populations are derived from the quinquennial censuses between 1971 and 2011. The population universe of the 2011<sup>3</sup> Census includes the following groups:

- Canadian citizens (by birth or by naturalization) and immigrants with a usual place of residence in Canada;
- Canadian citizens (by birth or by naturalization) and immigrants who are abroad either on a military base or attached to a diplomatic mission;
- Canadian citizens (by birth or by naturalization) and immigrants at sea or in port aboard merchant vessels under Canadian registry or Canadian government vessels;
- persons with a usual place of residence in Canada who are claiming refugee status and the family members living with them;
- persons with a usual place of residence in Canada who hold study permits and the family members living with them;
- persons with a usual place of residence in Canada who hold work permits and the family members living with them.

For census purposes, the last three groups are referred to as non-permanent residents (NPR). They have been included in the census universe since 1991 but foreign residents are not included. Foreign residents are persons who belong to the following groups:

- government representatives of another country attached to the embassy, high commission or other diplomatic body of that country in Canada, and members of their families living with them;
- members of the Armed Forces of another country who are stationed in Canada, and family members living with them;
- residents of another country visiting Canada temporarily (for example, a foreign visitor on vacation or on business, with or without a visitor's permit).

These base populations are adjusted as follows:

- adjustment of the population for CNU;
- addition of independent estimates for incompletely enumerated Indian reserves in 1991, 1996, 2001, 2006 and 2011;
- adjustment for early enumeration in 1991 and 1996 in parts of Northern Quebec, Newfoundland and Labrador, the Yukon and the Northwest Territories;
- addition of estimates of NPRs in 1971, 1976, 1981 and 1986. Since 1991, NPRs are included in the census universe;
- estimation of the July 1 base population by addition or subtraction of the components of growth between Census Day and June 30;
- demographic adjustment for old age population is an age structure adjustment of censal estimates for 2001, 2006 and 2011 by sex for each province and territory. These adjustments were performed from age 85 in 2001, from age 90 in 2006 and from age 95 in 2011.

### **Adjustment for the census net undercoverage (CNU)**

The adjustment for CNU is important. CNU is the difference between the number of persons who should have been enumerated but were missed (undercoverage) and the number of persons who were enumerated but should not have been or who were counted more than once (overcoverage).

Coverage studies provide undercoverage estimates for the 1991, 1996, 2001, 2006 and 2011 censuses at the provincial and territorial levels, and for the 1971, 1976, 1981 and 1986 censuses at the provincial level only. Estimates of overcoverage at the provincial and territorial levels are available only for the last five censuses (1991, 1996, 2001, 2006 and 2011). Overcoverage for previous censuses was estimated by assuming that the overcoverage-to-undercoverage ratio for each census between 1971 and 1986 was the same as in 1991. The CNU for the Yukon and the Northwest Territories prior to 1991 was estimated by assuming that the ratio between the CNU for each territory and the 10 provinces for each census between 1971 and 1986 was the same as in 1991.

For consistency, the 1991 Census undercoverage and overcoverage were revised in 1998 to take into account the methodological improvements made in the 1996 Census coverage studies. This revision altered CNU in all censuses between 1971 and 1986. Similarly, the 1996 Census undercoverage and overcoverage were revised in 2003.

### **B. Births and deaths**

The numbers of births and deaths are derived directly from the vital statistics database of Statistics Canada's Health Statistics Division. Although Statistics Canada manages the National system of vital statistics, the central vital statistics registries of the provinces and territories are responsible for collecting and processing the information from those administrative files. Under provincial / territorial vital statistics statutes (or similar legislation), all live births and all deaths must be registered, and all provinces and territories provide this information to Statistics Canada.

The vital statistics universe closely parallels the census universe. Both universes include the births and deaths of all Canadians, immigrants and non-permanent residents (NPR) and exclude foreign residents.

Vital statistics by province or territory of residence are used to produce our final estimates of births and deaths.

When there are no vital statistics, the number of births is estimated using fertility rates by the mother's age. The number of deaths is estimated by using mortality rates by age and sex. These methods are used to calculate preliminary<sup>2</sup> estimates.

Special treatment for preliminary<sup>2</sup> estimates for Quebec and British Columbia

Quebec and British Columbia provide their most recent estimates of births and deaths. The figures are used to produce preliminary<sup>2</sup> estimates. For the final estimates, the two provinces' births and deaths are derived from the vital statistics compiled by Health Statistics Division.

### Levels of estimates

For information on the differences between preliminary<sup>2</sup> and final estimates, see sections **B. Births and Deaths**, above.

### C. Immigration

Like the numbers of births and deaths, Canadian immigration statistics must be kept by law. In Canada, immigration is regulated by the Immigration and Refugee Protection Act (IRPA) of 2002. This statute superseded the Immigration Act, which was passed in 1976 and amended more than 30 times in the years thereafter. Immigration, Refugees and Citizenship Canada (IRCC) (formerly Citizenship and Immigration Canada (CIC)) collects and processes immigrants' administrative files. It then provides Statistics Canada with information from Global Case Management System (GCMS) files. The information is used to estimate the number and characteristics of people granted permanent resident status by the federal government on a given date. For Demography Division, the terms immigrant and permanent resident are equivalent.

An immigrant is a person who is not a Canadian citizen by birth, but has been granted the right to live in Canada permanently by Canadian immigration authorities. The number of immigrants does not include persons born abroad to Canadian parents who are only temporarily outside the country.

Immigrants are usually counted on or after the date on which they are granted permanent resident status or the right to live in Canada.

### Levels of estimates

The difference between preliminary<sup>2</sup> and final postcensal estimates lies in the timeliness of the source used to estimate this component. Since the GCMS files are continually being updated, new calculations are carried out each year to update the immigration estimates. Immigration estimates are preliminary the first year, updated the second year and final in the third year.

### D. Net non-permanent residents

Like the numbers of births and deaths, Canadian immigration statistics must be kept by law. In Canada, the non-permanent residents (NPR) are regulated by the *Immigration and Refugee Protection Act* (IRPA) of 2002. This statute superseded the *Immigration Act*, which was passed in 1976 and amended more than 30 times in the years thereafter. Immigration, Refugees and Citizenship Canada (IRCC) collects and processes the administrative files of immigrants and NPRs in Canada. It then provides Statistics Canada with information from Global Case Management System (GCMS) files. The information is used to estimate the number and characteristics of people granted non-permanent resident status by the federal government.

NPRs are persons who are lawfully in Canada on a temporary basis under the authority of a temporary resident permit, along with members of their family living with them. NPRs include foreign workers, foreign students, the humanitarian population and other temporary residents. The humanitarian population includes refugee claimants and temporary residents who are allowed to remain in Canada on humanitarian grounds and are not categorized as either foreign workers or foreign students. For Demography Division, the terms non-permanent resident and temporary resident are equivalent.

NPR estimates are based on the number of NPRs, not on the net. The number of people in IRCC's administrative system is estimated on a specific date in each period of observation. First, the end-of-period number of NPR

is estimated, and then the start-of-period number of NPR is subtracted from that estimate. That yields the net number of NPR.

Anyone who received non-permanent resident status prior to the observation date is counted. For refugee claimants, the date of their application is used. Permit holders and refugee claimants are excluded from the population if their permit has expired, if they receive permanent resident status, or if they are deported. In addition, refugee claimants are excluded if their file has been inactive for two years.

Since GCMS files are continually being updated, the figures are recalculated each year until the estimates of net NPR are final.

### Levels of estimates

The difference between preliminary<sup>2</sup> and final estimates lies in the timeliness of the source used to estimate this component. Since the GCMS files are continually being updated, the figures are recalculated each year to update the estimates of the net number of NPRs. Non-permanent resident (NPR) estimates are preliminary the first year and updated the following year. They become final two to three years after the reference year, when all other components are also final.

### E. Emigration

The number of emigrants is estimated using data from the Office of Immigration Statistics, U.S. Department of Homeland Security, data collected by the Canada Child Tax Benefit (CCTB) program, and data from the T1 Family File (T1FF).<sup>4</sup> The first source is used to estimate emigration to the United States. CCTB data are used to estimate emigration to other countries. The estimates of the number of child emigrants have to be adjusted because the CCTB is not universal and does not provide direct information on the number of adult emigrants. As a result, four adjustment factors are taken into account:

- incomplete coverage due to a delay in the receipt and processing of the files of children eligible for the CCTB. Since it seems to take four years after the reference period for CCTB administrative files to become complete, the adjustment is made when the estimates are used before this date. The factor is derived from the two-year ratios of emigrant children based on two versions of the CCTB files;
- the program's partial coverage, that is, people who do not apply for the CCTB or who are not eligible. This factor is obtained by comparing the estimated number of children in the population with the number of children in CCTB files;
- the differential propensity to emigrate between children who are eligible for the CCTB and children who are not. This factor is obtained by comparing the emigration rates of CCTB-eligible children with the rates for all children (aged 0 to 17). This factor is calculated for each province and territory and is based on the last three available years of T1FF;<sup>4</sup>
- the differential propensity to emigrate between adults and children. This factor generates the emigration rate for the population aged 18 and over. It is obtained by (1) calculating the average ratio over three years of the adult and child emigration rates based on T1FF<sup>4</sup> data, (2) calculating the average ratio over three years of the adult and child emigration rates based on data from the Office of Immigration Statistics, U.S. Department of Homeland Security, and (3) taking the average of the two rates. This factor is calculated for Canada only.

The adult emigration rate is applied to the adult population. Adult emigration is distributed by province and territory using data from the T1FF<sup>4</sup> file. We calculate a ratio of the number of emigrant adults to the number of emigrant children from the T1FF<sup>4</sup> file. We then apply this ratio to the number of emigrant children from the CCTB by province, which yields the number of adult emigrants whose provincial distribution will differ from that of the children.

The number of adult emigrants combined with the number of child emigrants (once adjusted for the coverage and differential emigration factors) generate the number of emigrants for the entire population.

Emigration is disaggregated by province and territory based on the number of child emigrants adjusted for coverage and differential emigration.

## Levels of estimates

The difference between preliminary<sup>2</sup> and final estimates lies in the timeliness of the sources used to estimate this component. The same estimation method is used.

### F. Net temporary emigration

Some people leave Canada to live temporarily in another country while others who were temporarily outside of Canada return. The net result of those departures and returns is the component known as “net temporary emigration”. Estimates of the number of departures are derived from the Reverse Record Check (RRC), the most important census coverage study. The RRC provides an estimate of the number of people who left Canada temporarily during an intercensal period and are still out of the country at the end of the period. Estimates of the number of returns are based on two sources: the census and Demography Division’s estimates of returning emigrants. The census provides the number of people who were outside Canada at the time of the previous census and returned during the intercensal period. That number includes all returning emigrants. Then Demography Division’s estimate of the returning emigrants component is subtracted to produce the number of returning temporary emigrants. The estimated numbers of departures (RRC) and returns (census and Demography Division) yield an estimate of net temporary emigration.

This estimate is for the whole intercensal period; it is disaggregated into estimates for each of the five years in the period and then into monthly estimates using a seasonal adjustment that is an average between zero seasonality and the seasonality of emigration.

Net temporary emigration is calculated first for the national level. It is then disaggregated by province or group of provinces based on RRC estimates of temporary emigration. For the Atlantic provinces and the territories, the estimate for the group is disaggregated on the basis of each province / territory’s proportion of the group’s total population.

Net temporary emigration can be estimated only for the intercensal period preceding the most recent census.

Net temporary emigration in the current period is assumed to be the same as in the previous period for each province and territory.

## Levels of estimates

The difference between preliminary<sup>2</sup> and final estimates lies in the timeliness of the emigration estimate used to calculate the seasonal adjustment for the net temporary emigration. The same estimation method is used.

### G. Returning emigrants

A returning emigrant is a person who returns to Canada after having been classified as an emigrant. In a manner similar to the procedure used to calculate the number of emigrants, data from the Canada Child Tax Benefit (CCTB) file from Canada Revenue Agency (CRA) and T1FF<sup>4</sup> file are used to estimate the number of returning emigrants. Adjustment factors are applied to compensate for the fact that the CCTB program is not universal, and an adult/child ratio is used to estimate the number of adult returning emigrants. As a result, four adjustment factors are used to take into account:

- incomplete coverage due to a delay in the receipt and processing of the files of children eligible for the CCTB. Since it seems to take four years after the reference period for CCTB administrative files to become complete, the adjustment is made when the estimates are used before this date. The factor is derived from the two-year ratios of returning emigrant children based on two versions of the CCTB files;
- the program’s partial coverage, that is, people who do not apply for the CCTB or who are not eligible. This factor is obtained by comparing the estimated number of children in the population with the number of children in CCTB files;
- the differential propensity to emigrate between children who are eligible for the CCTB and children who are not. This factor is obtained by comparing the emigration rates of CCTB-eligible children with the rates for all children (aged 0 to 17). This factor is calculated for each province and territory and is based on the last three available years of T1FFs;<sup>4</sup>
- the adult / child ratio, which is based on the 2011 National Household Survey.



## Levels of estimates

The difference between preliminary<sup>2</sup> and final estimates lies in the timeliness of the sources used to estimate this component. The same estimation method is used.

## H. Interprovincial migration

Interprovincial migration represents movements from one province or territory to another, involving a change in usual place of residence. As is the case for emigration, there is no provision for recording interprovincial migration in Canada. Consequently, such movements have to be estimated using data from the Canada child benefit (CCB) (formerly Canada Child Tax Benefit (CCTB)) of Canada Revenue Agency (CRA) and T1FF.<sup>4</sup>

Final estimates of interprovincial migration are obtained by comparing addresses indicated on personal income tax returns over two consecutive tax years. However, the migration status of tax filers' dependants has to be imputed. An adjustment is also required to take into account migrants who do not file income tax returns. From 2001/2002 to 2005/2006, the adjustment was slightly modified (for further information, see Wilkinson, 2004). From 2006/2007, this adjustment has been slightly modified (Cyr, 2008 – Internal document).

Since income tax returns are not available at the time preliminary estimates are produced, the estimation of preliminary<sup>2</sup> interprovincial migration is based on CCB administrative files, which provide counts of child migrants (aged 0 to 17) registered to the program. The estimates have to be adjusted later for children who are not registered to the CCB program. Finally, the number of adult migrants is calculated using the number of child migrants and factors derived from the T1FF.<sup>4</sup> As a result, three adjustment factors are used to take into account:

- the program's partial coverage, that is, people who are not registered to the CCB program. This factor is obtained by comparing the estimated number of children in the population with the number of children in CCB files;
- the differential propensity to migrate between children who are registered to the CCB program and children who are not. This factor is obtained by comparing the out-migration rates of children registered to the CCB program with the rates for all children (aged 0 to 17). This factor is calculated for each province and territory and is based on the last available year of T1FF;<sup>4</sup>
- the differential propensity to migrate between adults and children. This factor generates the out-migration rate of the population aged 18 and over for each province / territory of origin and destination. It is obtained by calculating the ratio of the central migration rate for adults to the rate for children. It is estimated using data from the last three available years of T1FF.<sup>4</sup>

The adult migration rate is then applied to the estimated adult population. The number of adult migrants is then added to the number of child migrants to produce the number of interprovincial migrants for the entire population.

Since 2015, the method to estimate the interprovincial migration has been modified. This new method is applied from July 2011 onward. In order to reduce the differences between the preliminary annual series (which was derived from the sum of 12 monthly migration matrices) and the final annual series, CCB microdata have been used. Using microdata is allowing estimating migration for various periods (monthly, quarterly and annually). It also allows improving the comparability between preliminary and final estimates. Final annual estimates (T1FF) are now distributed by quarter on the basis of preliminary quarterly estimates derived from CCB microdata. It is important to note that, as a result of using CCB microdata, it is not possible to add the quarterly interprovincial in-migrants and out-migrants estimates to get the annual estimates. It is however possible to add the quarterly net interprovincial migration estimates to get the annual estimates.

## Levels of estimates

For information on the differences between preliminary<sup>2</sup> and final estimates of total interprovincial migration, see section **H. Interprovincial migration** above.



**Intercensal population estimates**

Intercensal estimates – population estimates for reference dates between two censuses – are produced following each census. They reconcile previous postcensal estimates with the new census counts.

There are two main steps in the production of intercensal estimates:

- calculation of the error of closure;
- linear distribution of the error of closure.

The error of closure is defined as the difference between the postcensal population estimates on Census Day and the population enumerated in that census adjusted for CNU.<sup>1</sup>

The error of closure is spread uniformly over the intercensal period of days within each month.

## Quality of demographic data

The estimates contain certain inaccuracies stemming from two types of errors:

- errors in the census data;
- imperfections in other data sources and the method used to estimate the components.

### Census data

#### A. Coverage, response and imputation errors

The errors attributable to census data can be divided into two groups: response and processing errors, and coverage errors. The first group implies non-response error, misinterpretation by respondents, incorrect coding and non-response imputation. Errors in the second group primarily result from undercoverage and, to a lesser extent, overcoverage. It should be noted that both types of errors are intrinsic to any survey data.

The coverage errors occur when dwellings and/or individuals are missed, incorrectly included (except for the 2006 and 2011 censuses, where people incorrectly included were not considered in the Census Overcoverage Study) or counted more than once. Following each census, Statistics Canada undertakes coverage studies to measure these errors. The main studies are the Reverse Record Check Survey (RRC) and the Census Overcoverage Study (COS). Based on these studies, estimates of census undercoverage and overcoverage are produced. Demography Division adjusts the population enumerated in the census by province and territory using these estimates.

When creating base populations, the Estimates Program corrects the census populations only for coverage errors. This correction, which is based on the findings of coverage studies, is primarily subject to sampling errors, and to a lesser extent, processing errors. Statistical tests indicate that coverage adjustments improve the quality of census data. The Estimates Program uses the estimates from coverage studies for the provinces and territories. However, given the size of the samples in these studies, estimates by age and sex are modelled. Furthermore, it is assumed that the coverage rates estimated for a province or territory apply to the regions within that geographic area. Prior to 1991, the Estimates Program used census data that was unadjusted for coverage errors. Coverage studies had been done to measure undercoverage, but none measured overcoverage. Following the decision to integrate a correction for the coverage to the enumerated population in 1991, the Program had to revise the population estimates for the period from 1971 to 1986. The correction is based on the findings of the coverage studies conducted during this period and on hypotheses regarding the ratio between the overcoverage and undercoverage levels based on the findings of subsequent coverage studies.

The corrections to the census data due to CNU improved, in general, the quality of the estimates by compensating for the differential undercoverage by age, sex and by province/territory across censuses.

**Table D1**  
**Estimated census net undercoverage, Canada, provinces and territories, 2001, 2006 and 2011 Censuses**

Geography	Census population	Census net undercoverage	Incompletely enumerated Indian reserves	Adjusted population	Rate
	A	B	C	D=A+B+C	(B+C)/D*100
	number				percent
<b>2011<sup>1</sup></b>					
<b>Canada</b>	<b>33,476,688</b>	<b>759,125</b>	<b>37,392</b>	<b>34,273,205</b>	<b>2.32</b>
Newfoundland and Labrador	514,536	10,192	0	524,728	1.94
Prince Edward Island	140,204	3,386	0	143,590	2.36
Nova Scotia	921,727	21,911	0	943,638	2.32
New Brunswick	751,171	3,930	0	755,101	0.52
Quebec	7,903,001	73,240	16,882	7,993,123	1.13
Ontario	12,851,821	369,874	14,926	13,236,621	2.91
Manitoba	1,208,268	21,698	608	1,230,574	1.81
Saskatchewan	1,033,381	29,580	768	1,063,729	2.85
Alberta	3,645,257	128,584	4,094	3,777,935	3.51
British Columbia	4,400,057	91,280	114	4,491,451	2.03
Yukon	33,897	1,356	0	35,253	3.85
Northwest Territories	41,462	1,977	0	43,439	4.55
Nunavut	31,906	2,117	0	34,023	6.22
<b>2006<sup>1</sup></b>					
<b>Canada</b>	<b>31,612,897</b>	<b>868,658</b>	<b>40,115</b>	<b>32,521,670</b>	<b>2.79</b>
Newfoundland and Labrador	505,469	5,046	0	510,515	0.99
Prince Edward Island	135,851	1,903	0	137,754	1.38
Nova Scotia	913,462	24,558	0	938,020	2.62
New Brunswick	729,997	16,059	0	746,056	2.15
Quebec	7,546,131	60,751	16,600	7,623,482	1.01
Ontario	12,160,282	465,824	15,391	12,641,497	3.81
Manitoba	1,148,401	34,330	0	1,182,731	2.90
Saskatchewan	968,157	22,594	739	991,490	2.35
Alberta	3,290,350	111,353	7,272	3,408,975	3.48
British Columbia	4,113,487	121,551	113	4,235,151	2.87
Yukon	30,372	1,805	0	32,177	5.61
Northwest Territories	41,464	1,620	0	43,084	3.76
Nunavut	29,474	1,264	0	30,738	4.11
<b>2001<sup>1</sup></b>					
<b>Canada</b>	<b>30,007,094</b>	<b>924,430</b>	<b>34,539</b>	<b>30,966,063</b>	<b>3.10</b>
Newfoundland and Labrador	512,930	9,401	0	522,331	1.80
Prince Edward Island	135,294	1,325	0	136,619	0.97
Nova Scotia	908,007	24,521	0	932,528	2.63
New Brunswick	729,498	20,095	0	749,593	2.68
Quebec	7,237,479	140,232	12,648	7,390,359	2.07
Ontario	11,410,046	436,349	15,960	11,862,355	3.81
Manitoba	1,119,583	30,903	110	1,150,596	2.70
Saskatchewan	978,933	21,231	581	1,000,745	2.18
Alberta	2,974,807	69,857	4,977	3,049,641	2.45
British Columbia	3,907,738	164,542	263	4,072,543	4.05
Yukon	28,674	1,423	0	30,097	4.73
Northwest Territories	37,360	3,295	0	40,655	8.10
Nunavut	26,745	1,256	0	28,001	4.49

1. The levels and rates are based on the Reverse Record Check (RRC) and the Overcoverage Study and include non-permanent residents.

The adjustment also incorporates the results of a study on the estimates of the number of people living on incompletely enumerated Indian reserves to complete the corrections for coverage errors in the census. The results of the coverage studies contain mainly sampling errors.

These adjustments have a direct impact on:

- the error of closure and its distribution by age and sex within a province or a territory as well as by province/territory as the CNU<sup>1</sup> and its distribution vary from one census to another;

- within-cohort consistency of population estimates. If for example, the male cohort in age group 0 to 4 in 1981 was tracked up to the 2001 Census (unadjusted for CNU)<sup>1</sup> the age group 20 to 24 would be noticeably smaller in 2001 than the age group 15 to 19 in 1996. Since Canada receives many immigrants within these age groups, the opposite would be expected. However, only after adjustment for CNU,<sup>1</sup> the cohort size increases from 1996 to 2001.

For further information regarding the main coverage studies, please see the following document on Statistics Canada's web site: 1996, 2001, 2006 and 2011 Census Technical Report on Coverage.

## Components

Errors due to estimation methodologies and data sources other than the census can also be significant.

### A. Births and deaths

Since the law requires the recording of vital statistics, the final estimates for births and deaths data meet very high standards. Nevertheless, since preliminary estimates are derived, they can be slightly different from final estimates.

### B. Immigration and non-permanent residents

With respect to immigrants and non-permanent residents, Immigration, Refugees and Citizenship Canada (IRCC) (formerly Citizenship and Immigration Canada (CIC)) administers special data files on both of these components. Since immigration is controlled by law, data on immigrants and NPRs are compiled upon arrival in Canada. These data represent only "legal" immigration and exclude illegal immigrants. Thus, for the "legal" part of international movement into Canada, the data are considered to be of high quality. However, some biases such as the difference between the stated province of intended residence at the time of arrival and the actual province of residence, may persist. Finally, since information provided by the Visitor Data System (VDS) from IRCC is not complete (age and sex of dependents, province of residence for certain groups of permit holders), estimates of NPRs are more prone to error than data on immigrants.

### C. Emigration, returning emigration and net temporary emigration

Of all the demographic components that are used in the population estimates program, the emigration, returning emigration and net temporary emigration are the most difficult to estimate with precision. Canada does not have a complete border registration system. While immigration and non-permanent residents (NPRs) are well documented by the federal government, Statistics Canada has always used indirect techniques for the estimation of the number of persons leaving the country. For this reason, available statistics regarding these three components have historically been of a lower quality than other components.

Estimates of the number of emigrants and returning emigrants are both derived using Canada Child Tax Benefit (CCTB) data provided by Canada Revenue Agency (CRA). Estimates must be adjusted to take into account the incomplete coverage of the program and to derive the emigration and returning emigration of adults.

These adjustments and the delay in obtaining the data are the two main sources of errors. As current information on the number of persons living temporarily abroad does not exist, estimates are based on the Reverse Record Check (RRC) and the census. Estimates for the intercensal period, distributed equally among the five years, are maintained constant for the postcensal period. Moreover, assumptions were made to allow for the distribution of annual estimates to a quarterly level. Any geographical or quarterly variation may introduce error in the estimation of these components.

### D. Interprovincial migration

Since July 1993, preliminary<sup>2</sup> interprovincial migration estimates have been based on Canada child benefit (CCB) (formerly Canada Child Tax Benefit (CCTB)) files. As this program covers only children, various adjustments must be done in order to derive the migration of adults. Consequently, preliminary CCB based estimates are subject to larger error than final estimates derived from Canada Revenue Agency (CRA) tax files.

## Quality assessment

In order to assess the quality of our estimates, two evaluation measures are used: precocity errors and errors of closure.

### A. Precocity error

The quality of preliminary estimates of components is analyzed using precocity errors. Precocity error is defined as the difference between preliminary and final estimate in terms of its relative proportion of the total population most up to date postcensal population estimate. It can be calculated for both population and component estimates.

The precocity error allows for useful comparisons between components, as well as between provinces and territories of different population size. Note that when compared to the total population for an area, the differences between preliminary and final estimates of the components are quite small. There are, however, differences in the amount of impact on the population estimates between components and between provinces and territories.

Generally speaking, net interprovincial migration yields the greatest precocity errors. This is the result of the use of different data sources for preliminary and final estimates. In most years and for most provinces/territories, births, deaths and immigration estimates yield the smallest precocity errors. For immigration estimates, this reflects the completeness of the data source and the availability of data for the more timely preliminary estimates. In the case of births and deaths, small precocity errors can be explained by the use of a different method (method of ratios) for preliminary estimates.

According to the analysis of the most recent precocity errors and assuming that the quality of the basic data remains constant, the present postcensal estimates should have an acceptable degree of reliability.

For more information on annual precocity error analysis, see publication 91-215-XWE 2016000 (Quality of demographic data section).

**Table D2**  
**Quarterly precocity errors for components, Canada, provinces and territories**

Year/Component	Canada	N.L.	P.E.I.	N.S.	N.B.	Que	Ont.	Man.	Sask.	Alta.	B.C.	Y.T.	N.W.T.	Nvt.
	per thousand													
<b>Births</b>														
2012Q01	0.08	0.10	0.39	0.07	0.06	0.01	0.10	0.03	0.13	0.21	0.00	-0.70	-0.16	0.75
2012Q02	0.04	0.16	0.09	0.02	-0.01	0.03	0.04	0.09	-0.01	0.11	-0.01	-0.28	0.11	-0.64
2012Q03	-0.02	0.17	0.34	0.06	0.07	0.01	-0.03	-0.22	0.00	-0.06	-0.01	-0.33	-0.23	-0.32
2012Q04	0.04	0.30	0.33	0.05	0.14	0.01	0.05	0.15	0.13	0.00	-0.01	-0.17	0.30	0.09
<b>Deaths</b>														
2012Q01	0.14	0.24	0.06	0.12	0.21	0.02	0.24	0.19	0.29	0.11	-0.01	0.11	0.34	-0.17
2012Q02	0.08	-0.05	0.10	0.04	0.15	0.01	0.16	0.12	0.09	0.07	-0.01	-0.22	0.05	0.06
2012Q03	0.06	0.17	0.12	0.17	0.09	0.01	0.09	0.07	0.04	0.04	-0.01	0.17	-0.18	-0.09
2012Q04	0.07	0.11	0.19	0.19	0.19	0.02	0.09	0.17	0.02	0.14	-0.01	0.91	-0.02	0.57
<b>Immigration</b>														
2014Q01	-0.01	0.00	0.00	0.00	0.00	0.00	-0.01	0.00	-0.01	-0.01	-0.01	-0.03	0.00	0.00
2014Q02	0.00	-0.01	-0.01	-0.01	0.00	0.00	-0.01	-0.02	-0.01	-0.01	0.00	0.00	0.00	0.00
2014Q03	0.00	0.01	-0.02	0.01	-0.02	-0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
2014Q04	0.00	0.00	0.03	0.00	0.01	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00
<b>Emigration</b>														
2011Q03	0.03	0.06	-0.04	-0.21	-0.05	0.05	0.02	0.35	-0.10	0.16	-0.10	-0.23	0.23	0.32
2011Q04	-0.06	0.06	0.01	-0.04	-0.01	0.00	-0.09	0.17	-0.02	0.11	-0.33	-0.17	0.02	0.20
2012Q01	-0.12	0.03	-0.01	-0.09	-0.03	-0.04	-0.16	0.10	-0.13	-0.03	-0.34	-0.14	0.02	0.12
2012Q02	-0.07	-0.03	-0.05	-0.13	0.03	-0.03	-0.07	0.08	-0.06	-0.06	-0.19	-0.22	0.00	0.12
<b>Returning emigration</b>														
2011Q03	-0.12	-0.02	-0.03	-0.07	-0.01	-0.10	-0.14	-0.10	-0.11	-0.20	-0.11	-0.06	0.00	0.00
2011Q04	-0.06	-0.01	-0.02	-0.03	-0.01	-0.05	-0.06	-0.05	-0.05	-0.09	-0.05	0.00	0.00	0.00
2012Q01	-0.05	-0.01	-0.01	-0.03	-0.01	-0.04	-0.05	-0.04	-0.05	-0.08	-0.04	0.00	0.00	0.00
2012Q02	-0.03	0.01	-0.08	-0.01	0.05	-0.03	-0.04	-0.06	-0.05	-0.07	0.01	0.08	0.00	0.03
<b>Net temporary emigration</b>														
2011Q03	0.04	0.09	0.08	0.10	0.10	0.04	0.08	0.06	0.03	0.03	-0.11	0.00	0.05	0.00
2011Q04	0.01	0.06	0.05	0.06	0.06	0.02	0.04	0.03	0.01	0.00	-0.11	0.00	0.00	0.00
2012Q01	0.00	0.05	0.05	0.05	0.05	0.01	0.03	0.02	0.01	-0.01	-0.13	0.00	0.00	0.00
2012Q02	0.07	0.11	0.10	0.11	0.11	0.05	0.11	0.08	0.04	0.06	-0.03	0.08	0.07	0.09
<b>Net non-permanent residents</b>														
2011Q03	0.07	0.30	0.70	0.38	0.37	-0.16	-0.11	0.39	0.98	1.27	-0.53	3.16	1.26	0.26
2011Q04	0.02	-0.12	-0.12	-0.11	-0.09	-0.07	0.33	-0.07	-0.09	-0.38	-0.26	-0.65	-0.34	-0.15
2012Q01	0.01	0.08	-0.19	0.01	0.02	0.03	-0.10	-0.01	0.22	0.27	-0.02	0.08	0.11	-0.12
2012Q02	-0.01	0.19	0.68	0.04	0.26	0.05	-0.23	0.16	0.32	0.53	-0.11	0.92	0.32	-0.14
<b>In-migrants</b>														
2014Q03	-0.06	0.02	-1.76	-0.06	0.02	0.06	-0.04	-0.11	0.28	0.00	-0.43	2.44	2.21	-0.31
2014Q04	0.00	-0.23	-0.36	0.06	-0.08	0.05	-0.01	-0.02	0.38	0.12	-0.23	2.19	-1.20	-0.22
2015Q01	0.09	0.11	-0.70	0.61	-0.02	0.03	0.02	0.36	0.69	0.38	-0.18	0.70	2.27	4.66
2015Q02	0.03	0.32	-0.40	0.51	0.23	0.04	-0.03	0.04	0.45	0.36	-0.44	4.48	1.65	8.62
<b>Out-migrants</b>														
2014Q03	-0.06	0.80	-0.26	-0.48	-0.31	0.01	-0.09	0.07	-0.19	0.01	-0.14	-0.46	2.92	2.08
2014Q04	0.00	0.78	-0.38	0.03	0.13	-0.01	0.01	0.00	-0.04	-0.14	-0.04	2.65	4.36	0.75
2015Q01	0.09	1.01	0.49	-0.22	0.10	0.02	0.03	0.21	0.22	0.32	-0.04	-1.06	12.01	2.01
2015Q02	0.03	1.31	1.09	0.12	0.21	-0.02	-0.03	0.33	0.08	-0.27	0.18	2.64	3.23	3.75
<b>Net interprovincial migration</b>														
2014Q03	...	-0.78	-1.50	0.42	0.33	0.05	0.05	-0.18	0.48	-0.02	-0.30	2.90	-0.71	-2.39
2014Q04	...	-1.01	0.02	0.03	-0.21	0.06	-0.02	-0.02	0.42	0.27	-0.18	-0.46	-5.56	-0.97
2015Q01	...	-0.90	-1.19	0.83	-0.12	0.01	-0.01	0.15	0.46	0.06	-0.15	1.76	-9.74	2.65
2015Q02	...	-0.99	-1.48	0.39	0.02	0.06	-0.01	-0.29	0.37	0.63	-0.62	1.83	-1.58	4.87

... not applicable

## B. Error of closure

The error of closure measures the exactness of the final postcensal estimates. It is defined as the difference between the final postcensal population estimates on Census Day and the enumerated population of the most recent census adjusted for census net undercoverage (CNU<sup>1</sup>). A positive error of closure means that the postcensal population estimates have overestimated the population.

The error of closure comes from two sources: errors primarily due to sampling when measuring census coverage and errors related to the components of population growth over the intercensal period. For each five-year intercensal period, the error of closure can only be calculated following the release of census data and estimates of CNU.<sup>1</sup> The error of closure can be calculated for the total population of each province and territory as well as by age and sex.

Table D3 shows postcensal population estimates on May 10, 2011 and census counts adjusted for CNU<sup>1</sup> and the errors of closure for Canada, provinces and territories for 2001, 2006 and 2011.

For Canada as a whole, the error of closure was estimated at 171,115 or 0.50% in 2011. This is an increase over the errors for 2001 (0.16%) and 2006 (0.14%).

The population estimates overestimated the population of six provinces, two territories and Canada as a whole. Four provinces and two territories posted errors of closure greater than 1% or less than -1%. Of these jurisdictions, only Newfoundland and Labrador's estimated population differed from the adjusted census population by more than 2% (-2.09%). In 2006, two provinces and three territories posted errors of closure greater than 1% or less than -1%, while this was the case for three provinces and two territories in 2001.

By considering the variance in CNU, it is possible to identify errors of closure that are statistically significant. Table D3 shows the results of this analysis.

The error of closure is statistically significant for Canada, five provinces and one territory. This means that the population estimates significantly overestimated or underestimated the adjusted census population in these jurisdictions. As noted above, these results are due to both the sampling for census coverage studies and errors in the components of population growth over the intercensal period. Among these components, interprovincial migration and emigration are mostly associated with large errors of closure.

**Table D3**  
**Error of closure of the population estimates, Canada, provinces and territories, 2001, 2006 and 2011**

Geography	Postcensal estimate on Census Day	Census adjusted for CNU <sup>1</sup>	Error of closure		CNU standard error <sup>2</sup>	t value <sup>3</sup>
	A	B	C=A-B	D=C/B*100	E	F=C/E
	number			%	number	
<b>2011</b>						
<b>Canada</b>	<b>34,444,320</b>	<b>34,273,205</b>	<b>171,115</b>	<b>0.50</b>	<b>57,546</b>	<b>2.97</b>
Newfoundland and Labrador	513,745	524,728	-10,983	-2.09	2,912	-3.77
Prince Edward Island	145,745	143,590	2,155	1.50	923	2.33
Nova Scotia	948,697	943,638	5,059	0.54	5,346	0.95
New Brunswick	756,630	755,101	1,529	0.20	3,335	0.46
Quebec	7,972,672	7,993,123	-20,451	-0.26	23,660	-0.86
Ontario	13,360,099	13,236,621	123,478	0.93	44,121	2.80
Manitoba	1,252,662	1,230,574	22,088	1.79	6,104	3.62
Saskatchewan	1,055,988	1,063,729	-7,741	-0.73	6,306	-1.23
Alberta	3,776,676	3,777,935	-1,259	-0.03	18,046	-0.07
British Columbia	4,548,383	4,491,451	56,932	1.27	19,494	2.92
Yukon	35,364	35,253	111	0.31	303	0.37
Northwest Territories	44,113	43,439	674	1.55	323	2.09
Nunavut	33,546	34,023	-477	-1.40	608	-0.78
<b>2006</b>						
<b>Canada</b>	<b>32,565,797</b>	<b>32,521,670</b>	<b>44,127</b>	<b>0.14</b>	<b>53,926</b>	<b>0.82</b>
Newfoundland and Labrador	508,881	510,515	-1,634	-0.32	2,710	-0.60
Prince Edward Island	137,748	137,754	-6	0.00	701	-0.01
Nova Scotia	933,827	938,020	-4,193	-0.45	4,885	-0.86
New Brunswick	748,785	746,056	2,729	0.37	3,105	0.88
Quebec	7,646,288	7,623,482	22,806	0.30	24,077	0.95
Ontario	12,664,181	12,641,497	22,684	0.18	41,363	0.55
Manitoba	1,176,919	1,182,731	-5,812	-0.49	6,469	-0.90
Saskatchewan	987,735	991,490	-3,755	-0.38	4,805	-0.78
Alberta	3,358,568	3,408,975	-50,407	-1.48	16,091	-3.13
British Columbia	4,299,225	4,235,151	64,074	1.51	16,591	3.86
Yukon	31,151	32,177	-1,026	-3.19	194	-5.29
Northwest Territories	42,165	43,084	-919	-2.13	236	-3.89
Nunavut	30,324	30,738	-414	-1.35	176	-2.35
<b>2001</b>						
<b>Canada</b>	<b>31,016,011</b>	<b>30,966,063</b>	<b>49,948</b>	<b>0.16</b>	<b>44,749</b>	<b>1.12</b>
Newfoundland and Labrador	533,712	522,331	11,381	2.18	1,782	6.39
Prince Edward Island	138,102	136,619	1,483	1.09	775	1.91
Nova Scotia	941,533	932,528	9,005	0.97	4,170	2.16
New Brunswick	754,180	749,593	4,587	0.61	3,555	1.29
Quebec	7,390,137	7,390,359	-222	0.00	21,033	-0.01
Ontario	11,873,643	11,862,355	11,288	0.10	33,472	0.34
Manitoba	1,149,561	1,150,596	-1,035	-0.09	5,423	-0.19
Saskatchewan	1,016,762	1,000,745	16,017	1.60	4,333	3.70
Alberta	3,051,245	3,049,641	1,604	0.05	11,308	0.14
British Columbia	4,068,196	4,072,543	-4,347	-0.11	15,598	-0.28
Yukon	29,737	30,097	-360	-1.20	372	-0.97
Northwest Territories	41,152	40,655	497	1.22	362	1.37
Nunavut	28,051	28,001	50	0.18	411	0.12

1. Census net undercoverage includes the incompletely enumerated Indian reserves.

2. Census net undercoverage excludes the incompletely enumerated Indian reserves.

3. An error of closure with a t value greater than 1.96 or less than -1.96 is statistically significant at the 95% confidence level.



## Explanatory notes for the tables

**Table D4**  
**Quarterly population estimates and factors of demographic growth**

Quarter	Population at beginning period	Natural increase	Net interprovincial migration	Net international migration	Total net migration	Total growth
Q3 2011	PD	D	D	D	D	D
Q4 2011	PD	D	D	D	D	D
Q1 2012	PD	D	D	D	D	D
Q2 2012	PD	D	D	D	D	D
Q3 2012	PD	D	D	R	R	R
Q4 2012	PR	D	D	R	R	R
Q1 2013	PR	R	D	R	R	R
Q2 2013	PR	R	D	R	R	R
Q3 2013	PR	R	D	R	R	R
Q4 2013	PR	R	D	R	R	R
Q1 2014	PR	R	D	R	R	R
Q2 2014	PR	R	D	R	R	R
Q3 2014	PR	R	D	R	R	R
Q4 2014	PR	R	D	R	R	R
Q1 2015	PR	R	D	R	R	R
Q2 2015	PR	R	D	R	R	R
Q3 2015	PR	R	R	R	R	R
Q4 2015	PR	R	R	R	R	R
Q1 2016	PR	R	R	R	R	R
Q2 2016	PR	P	P	P	P	P
Q3 2016	PP	P	P	P	P	P
Q4 2016	PP	P	P	P	P	P
Q1 2017	PP	P	P	P	P	P
Q2 2017	PP	..	..	..	..	..
Modified since <sup>1</sup>	..	..	..	..	..	..

.. not available for a specific reference period

1. Modified since indicates the quarter from which the data were revised since the last release. Last quarter's data were not modified as they are released for the first time.

**Notes:** D: Final estimates. PD: Final postcensal estimates. R: Updated estimates. PR: Updated postcensal estimates. P: Preliminary estimates. PP: Preliminary postcensal estimates. Q1: January to March. Q2: April to June. Q3: July to September. Q4: October to December.

**Table D5**  
**Quarterly estimates of components of demographic growth**

Quarter	Births	Deaths	In-migrants	Out-migrants	Immigrants	Emigrants	Returning emigrants	Net temporary emigrants	Net non-permanent residents
Q3 2011	D	D	D	D	D	D	D	D	D
Q4 2011	D	D	D	D	D	D	D	D	D
Q1 2012	D	D	D	D	D	D	D	D	D
Q2 2012	D	D	D	D	D	D	D	D	D
Q3 2012	D	D	D	D	D	R	R	R	R
Q4 2012	D	D	D	D	D	R	R	R	R
Q1 2013	R	R	D	D	D	R	R	R	R
Q2 2013	R	R	D	D	D	R	R	R	R
Q3 2013	R	R	D	D	D	R	R	R	R
Q4 2013	R	R	D	D	D	R	R	R	R
Q1 2014	R	R	D	D	D	R	R	R	R
Q2 2014	R	R	D	D	D	R	R	R	R
Q3 2014	R	R	D	D	D	R	R	R	R
Q4 2014	R	R	D	D	D	R	R	R	R
Q1 2015	R	R	D	D	R	R	R	R	R
Q2 2015	R	R	D	D	R	R	R	R	R
Q3 2015	R	R	R	R	R	R	R	R	R
Q4 2015	R	R	R	R	R	R	R	R	R
Q1 2016	R	R	R	R	R	R	R	R	R
Q2 2016	P	P	P	P	P	P	P	P	P
Q3 2016	P	P	P	P	P	P	P	P	P
Q4 2016	P	P	P	P	P	P	P	P	P
Q1 2017	P	P	P	P	P	P	P	P	P
Modified since <sup>1</sup>	..	..	..	..	..	..	..	..	..

.. not available for a specific reference period

1. Modified since indicates the quarter from which the data were revised since the last release. Last quarter's data were not modified as they are released for the first time.

**Notes:** D : Final estimates. R : Updated estimates. P : Preliminary estimates. Q1 : January to March. Q2 : April to June. Q3 : July to September. Q4 : October to December.

**Endnotes**

1. In this case, the adjustment for the census net undercoverage also includes the incompletely enumerated Indian reserves (IEIR).
2. Unless otherwise noted, the term preliminary include both preliminary and updated estimates.
3. From 1991 to 2001 Census, “persons with a usual place of residence in Canada who hold Minister’s permits (including extensions) and members of their families living with them” were included in the census universe.
4. The T1 family file (T1FF) is derived from the Canada Revenue Agency (CRA) T1 file by Income Statistics Division of Statistics Canada.

## Appendix 1: Glossary

### Census coverage

**Census net undercoverage:** Difference between undercoverage and overcoverage.

**Overcoverage:** Number of persons who should not have been counted in the census or who were counted more than once.

**Undercoverage:** Number of persons who were intended to be enumerated in a census but were not.

### Components of demographic growth

Any of the classes of events generating population movement variations. Births, deaths and migrations are the components responsible for the variation since they alter the total population.

### Emigrant

Canadian citizen or **immigrant** who has left Canada to establish a residence in another country, involving a change in usual place of residence. Emigration may be either temporary or permanent. Where the term is used alone, it references to a person's permanent emigration which involves severing residential ties with Canada and acquiring permanent residency in another country.

### Error of closure

Difference between the **postcensal estimate** at the census date and the results of the census adjusted for **census net undercoverage** (including adjustment for incompletely enumerated Indian reserves).

### Immigrant

Within the framework of this publication, the terms immigrant, landed immigrant and permanent resident are equivalent. An immigrant refers to a person who is or has ever been a landed immigrant (permanent resident) and who has been granted the right to live in Canada permanently by immigration authorities. Immigrants are either Canadian citizens by naturalization (the citizenship process) or permanent residents under Canadian legislation. Some immigrants have resided in Canada for a number of years, while others have arrived recently. Most immigrants are born outside Canada, but a small number are born in Canada. Also, children born in other countries to parents who are Canadian citizens that reside temporarily in another country are not included in the category as they become Canadian citizens at birth.

### International migration

International migration represents movement of population between Canada and a foreign country which involves a change in the usual place of residence. A distinction is made with regard to **immigrants, emigrants, returning emigrants, net temporary emigration** and **net non-permanent residents**.

### Interprovincial migration

Interprovincial migration represents all movements from one province or territory to another involving a change in the usual place of residence. A person who takes up residence in another province or territory is an **out-migrant** with reference to the province or territory of origin and an **in-migrant** with reference to the province or territory of destination.

### Natural increase

Variation in the population size over a given period as a result of the difference between the numbers of births and deaths.

### Net international migration

Net international migration is obtained according to the following formula:

**Immigrants + returning emigrants + net non-permanent residents – (emigrants + net temporary emigrants).**

### Net interprovincial migration

Net interprovincial migration represents the difference between **in-migrants** and **out-migrants** for a given province or territory.

### Net non-permanent residents

Net non-permanent residents represent the variation in the number of non-permanent residents between two dates.

**Non-permanent residents**

A non-permanent resident is a person who is lawfully in Canada on a temporary basis under the authority of a valid document (work permit, study permit, Minister's permit or refugee) issued for that person along with members of his family living with them. This group also includes individuals who seek refugee status upon or after their arrival in Canada and remain in the country pending the outcome of processes relative to their claim. Note that Immigration, Refugees and Citizenship Canada (IRCC) uses the term temporary resident rather than non-permanent resident.

**Net temporary emigration**

Net temporary emigration represents the variation in the number of temporary emigrants between two dates. Temporary emigration includes Canadian citizens and *immigrants* living temporarily abroad who have not maintained a usual place of residence in Canada.

**Population**

Estimated population and population according to the census are both defined as being the number of Canadians whose usual place of residence is within that area, regardless of where they happened to be on Census Day. Also included are any Canadians staying in a dwelling in that area on Census Day and having no usual place of residence elsewhere in Canada, as well as those considered **non-permanent residents**.

**Population estimate**

- a. **Postcensal:** Population estimate produced by using data from the most recent available census adjusted for **census net undercoverage** (including adjustment for incompletely enumerated Indian reserves) and estimate of the **components of demographic growth** since that last census. This estimate can be preliminary, updated or final.
- b. **Intercensal:** Population estimate derived by using **postcensal estimates** and data adjusted for **census net undercoverage** (including adjustment for incompletely enumerated Indian reserves) of censuses preceding and following the year in question.

**Population growth or total growth**

Variation of population size between two dates. It can also be obtained by summing the natural increase, total net migration and if applicable, subtract residual deviation. It can be positive or negative.

**Precocity error**

Difference between preliminary and final estimate of a particular component in terms of its relative proportion of the total population for the relevant geographical area. It can be calculated for either population estimates or components of population growth.

**Rate**

Refers to the ratio of the number of events estimated in a year ( $t$ ,  $t+i$ ) to the average populations at the beginning and the end of the period. In this regard, births, deaths, immigration rates, etc. are calculated. Generally, the rates are expressed in per 1,000.

**Census net undercoverage of population rate:** Difference between the census undercoverage rate and the census overcoverage rate.

**Demographic growth rate or population growth rate:** Ratio of population growth between the year  $t$  and  $t+i$ , to the average **population** of both these years. The rate is generally expressed in per 1,000.

**Overcoverage of population rate:** The ratio of the number of persons who should not have been counted in the census or who were counted more than once to the total number of persons that should have been enumerated in the census. Generally, the rate is expressed in percentage.

**Undercoverage of population rate:** The ratio of the estimated number of persons not enumerated in the census (who were intended to have been enumerated) to the total number of persons that should have been enumerated in the census. Generally, the rate is expressed in percentage.

**Residual deviation**

Difference between demographic population growth calculated using intercensal estimates of population between two dates and that obtained by the sum of the components for the same period. This deviation results from the

distribution of the error of closure between years within the quinquennial period. This distribution is calculated by taking into account the number of days within each month.

**Returning emigrant**

Canadian citizen or *immigrant* having previously emigrated from Canada and subsequently returned to the country.

**Total net migration**

Sum of *net international* and *net interprovincial* migration.

**Vital statistics**

Includes all the demographic events (births, deaths, marriages and divorces) for which there are a legal requirement to inform the Provincial or Territorial Registrar's Office.

## Appendix 2: Source and remarks

### Base population

May 10, 2011 Census of Population adjusted for census net undercoverage and incompletely enumerated Indian reserves.

2011 Census: Statistics Canada, Census of Canada, 2011, Catalogue no. [98-310-X](#).

Census net undercoverage: See The Daily, September 26, 2013.

Incompletely enumerated Indian reserves: See The Daily, September 26, 2013.

### Births and deaths

Statistics Canada, Health Statistics Division.

Statistics Canada, Demography Division, Catalogue no. 91-002-X, Quarterly.

#### Births

Fertility rates for 2012 based on births by age of mother provided by Health Statistics Division applied to the female population estimates at the beginning of the quarter. Births for Quebec and British Columbia were provided by their respective agencies.

#### Deaths

Mortality rates for 2012 based on deaths by age group and sex provided by Health Statistics Division applied to the population estimates by age group and sex at the beginning of the quarter. Deaths for Quebec and British Columbia were provided by their respective agencies.

### Immigration

Estimates are based on the immigrant files provided by Immigration, Refugees and Citizenship Canada (IRCC) received on May 16, 2017.

### Emigration

The estimates are produced by Demography Division using:

- data from Canada Revenue Agency (CRA) Canada Child Tax Benefit files (CCTB) program. From 2014/2015, we used 2013/2014 data;
- tax data calculated using T1FF file provided by the Income Statistics Division of Statistics Canada. From 2014/2015, we used 2013/2014 data;
- data provided by the U.S. Department of Homeland Security, Office of Immigration Statistics. From 2015/2016, we used 2014/2015 data;
- data on the number of adult and children emigrants from T1FF file used for the provincial distribution of adults. From 2014/2015, we used 2013/2014 data.

From July 2016, data from the 2015/2016 period are repeated.

### Returning emigration

The estimates are produced by Demography Division using:

- data from Canada Revenue Agency (CRA) Canada Child Tax Benefit files (CCTB) program. From 2014/2015, we used 2013/2014 data;
- 2011 National Household Survey – question on the place of residence one year ago.

From July 2016, data from the 2015/2016 period are repeated.

## Net temporary emigration

The estimates are produced by Demography Division using:

- data from the Reverse Record Check (RRC) of the 2011 Census;
- 2011 National Household Survey – question on the place of residence 5 years ago;
- estimates of returning emigrants for 2006 to 2011 intercensal period
- distribution by age and sex of emigrants.

From July 2016, data from the 2015/2016 period are repeated.

## Non-permanent residents

The estimates are produced by Demography Division using the Global Case Management System (GCMS) files from IRCC. These files, received on May 16, 2017, document the number of persons holding permits/authorizations or claiming refugee status.

## Interprovincial migration

The estimates are produced by Demography Division using:

- Canada child benefit (CCB) (formerly Canada child tax benefit (CCTB)) adjusted migration data for children;
- factors ( $G_j$ ) corresponding to the ratio of the migration rate of all children to the migration rate of children who are registered to the CCB program calculated using 2014/2015 tax file data;
- factors ( $F_{jk}$ ) used to calculate adult migration and corresponding to the ratio of the adult to child migration rates, calculated on a three-year basis using tax file data for 2012/2013, 2013/2014 and 2014/2015.

**Note:** We remind you that it is normal for the sum of the monthly in- and out- interprovincial migrants not to be equal to the number of quarterly or yearly interprovincial in- and out- migrants.



## Related products

### Publications

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91-003-X	Canadian Demographics at a Glance
91-209-X	Report on the Demographic Situation in Canada
91-214-X	Annual Demographic Estimates: Subprovincial Areas
91-215-X	Annual Demographic Estimates: Canada, Provinces and Territories
91-520-X	Population Projections for Canada, Provinces and Territories
91-528-X	Population and Family Estimation Methods at Statistics Canada

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### CANSIM tables

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051-0001	Estimates of population, by age group and sex for July 1, Canada, provinces and territories, annual
051-0002	Estimates of deaths, by sex and age group, Canada, provinces and territories, annual
051-0004	Components of population growth, Canada, provinces and territories, annual
051-0005	Estimates of population, Canada, provinces and territories, quarterly
051-0011	International migrants, by age group and sex, Canada, provinces, and territories, annual
051-0012	Interprovincial migrants, by age group and sex, Canada, provinces and territories, annual
051-0013	Estimates of births, by sex, Canada, provinces and territories, annual
051-0017	Interprovincial migrants, Canada, provinces and territories, quarterly
051-0018	Interprovincial in-, out- and net-migrants, Canada, provinces and territories, annual
051-0019	Interprovincial migrants, by province or territory of origin and destination, annual
051-0020	Number of non-permanent residents, Canada, provinces and territories, quarterly
051-0037	International migration components, Canada, provinces and territories, quarterly
051-0041	Number of non-permanent residents, by age group and sex for July 1, Canada, provinces and territories, annual
051-0042	Estimates of population, by marital status or legal marital status, age and sex for July 1, Canada, provinces and territories, annual
051-0045	Interprovincial migrants, by province or territory of origin and destination, quarterly
051-0055	Estimates of the number of census families for July 1, Canada, provinces and territories
053-0001	Estimates of births, deaths and marriages, Canada, provinces and territories, quarterly
102-0502	Deaths, by month, Canada, provinces and territories, annual
102-0503	Deaths, by age and sex, Canada, provinces and territories, annual
102-4502	Live births, by month, Canada, provinces and territories, annual
102-4503	Live births, by age of mother, Canada, provinces and territories, annual

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### Surveys

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3231	Vital Statistics - Birth Database
3233	Vital Statistics - Death Database
3601	Estimates of Total Population, Canada, Provinces and Territories
3604	Estimates of Population by Age and Sex for Canada, Provinces and Territories
3605	Estimates of Population by Marital Status, Legal Marital Status, Age and Sex for Canada, Provinces and Territories
3606	Estimates of the number of Census Families for Canada, Provinces and Territories

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### Summary tables

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Births, estimates, by province and territory
Deaths, estimates, by province and territory
Components of population growth, by province and territory
Population by year, by province and territory
Population by sex and age group
Population by sex and age group, by province and territory
Population by marital status and sex
Population by marital status and sex, by province and territory

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